

Design and Fabrication of Rugged FRED

ABSTRACT OF THE DISCLOSURE

5 An improved Fast Recovery Diode comprises a main PN junction defining a
central conduction region for conducting high current in a forward direction and a
peripheral field spreading region surrounding the central conduction region for
blocking high voltage in the reverse direction. The main PN junction has an
avalanche voltage equal to or lower than an avalanche voltage of the peripheral
field spreading region so substantially the entire said main PN junction participates
10 in avalanche conduction. This rugged FRED structure can also be formed in
MOSFETS, IGBTs and the like.